

1. a)  $r = 4$   
 $h = 10$

$$V = \pi r^2 h$$
$$V = 3.14 \times 4 \times 4 \times 10$$
$$= 502.4 \text{ cm}^3$$

b)  $r = 7.5 \text{ mm}$   
 $h = 50 \text{ mm}$

$$V = \pi r^2 h$$
$$= 3.14 \times 7.5 \times 7.5 \times 50$$
$$= 8831.25 \text{ mm}^3$$

c)  $r = 2.9 \text{ m}$   
 $h = 12.4 \text{ m}$

$$V = \pi r^2 h$$
$$= 3.14 \times 2.9 \times 2.9 \times 12.4$$
$$= 327.4 \text{ m}^3$$

2.  $r = 5 \text{ cm}$   
 $h = 20 \text{ cm}$

$$V = \pi r^2 h$$

$$= 3.14 \times 5^2 \times 20$$

$$= \underline{1570 \text{ cm}^3}$$

3.  $r = 3.5 \text{ cm}$   
 $h = 12 \text{ cm}$

$$V = \pi r^2 h$$

$$= 3.14 \times 3.5 \times 3.5 \times 12$$

$$= \underline{461.58 \text{ cm}^3}$$

b)  $461.58 \times 0.95 = \underline{438.50 \text{ cm}^3}$

4. length =  $300 \text{ mm} = 30.0 \text{ cm}$   
diameter =  $150 \text{ mm}$

$$r = d \div 2 = 150 \div 2$$

$$= 75 \text{ mm} = 7.5 \text{ cm}$$

$$V = \pi r^2 h$$

$$= 3.14 \times 75 \times 75 \times 300$$

$$= 5298750 \text{ mm}^3$$

$$V = \pi r^2 h$$

$$= 3.14 \times 7.5 \times 7.5 \times 30$$

$$= 5298.75 \text{ cm}^3$$

# Surface Area of a Cylinder.

Review

$$C = \pi d$$

$$C = \pi \times r \times 2$$

$$d = r \times 2$$

$$A = \pi r^2$$

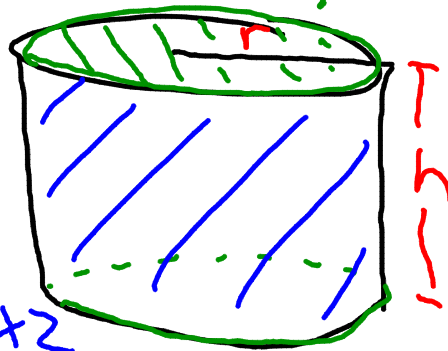
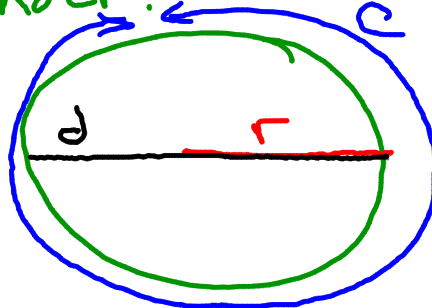
$$V = \pi r^2 h$$

$$S.A = 2\pi r^2$$

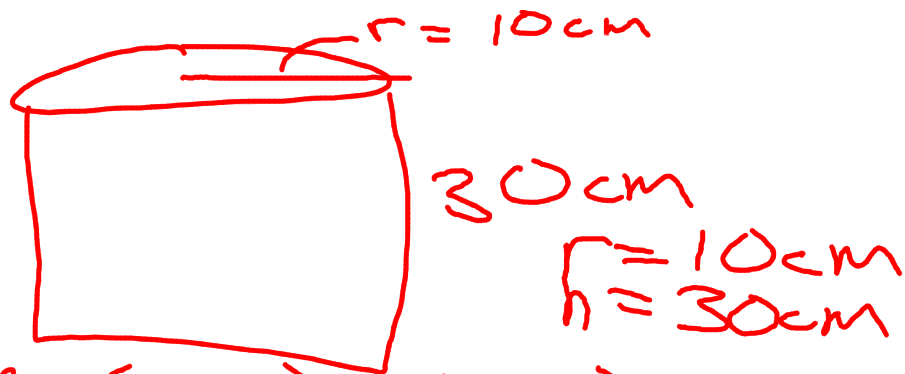
Of top and bottom

$$A_{\square} = h \times w$$

$$= h \times \pi \times r \times 2$$



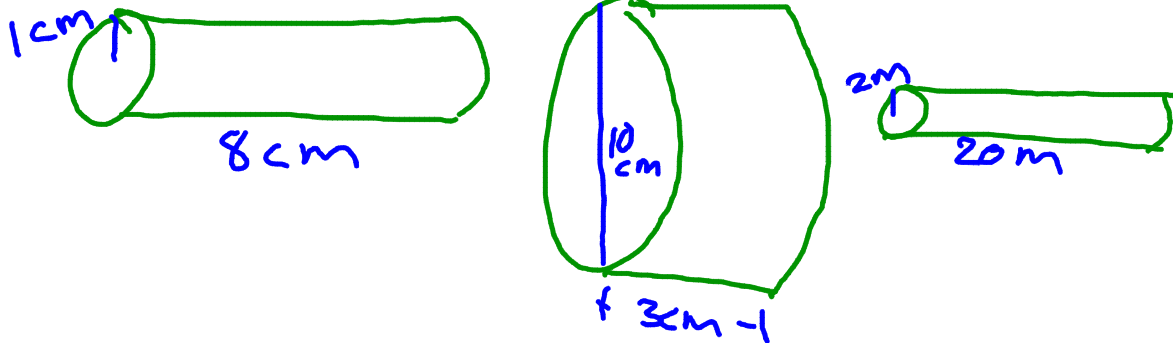
$$S.A_{\square} = 2\pi r^2 + 2\pi r h$$



$$\begin{aligned}
 \text{S.A.} &= \underline{(2\pi r^2)} + \underline{(2\pi rh)} \\
 &= 2 \times 3.14 \times 10 \times 10 + 2 \times 3.14 \times 10 \times 30 \\
 &= \underline{628} + \underline{1884} \\
 &= 2512 \text{ cm}^2
 \end{aligned}$$

Homework: pg 260 # 1-5

Calculate the curved surface area of each tube.



Calculate the surface area of each cylinder.



A cylindrical tank has a diameter of 3.8 m and length 12.7 m.  
What is the surface area of the tank.

Cylindrical paper dryers are used in pulp and paper mills.  
One dryer has diameter 1.5 m and length 2.5 m.  
What is the area of the curved surface of this dryer?

A wooden toy kit has different painted solids.

One solid is a cylinder with diameter 2 cm and height 14 cm.

a) What is the surface area of the cylinder?

One paint can covers  $40 \text{ m}^2$ . How many cylinders can be painted with one can of paint?